An Empire District Electric Initiative

Electric Vehicles

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Business and Community Development Manager

EV Models in USA

Plug-In Models

US carmakers currently offer 95 different hybrid and electric models

with many more coming in 2017

PHEV


Toyota Prius Prime


Chevy Volt


Toyota Prius Plug-in


Cadillac ELR


Mercedez S 550


BMW 740e


Chrysler Pacifica Plug-In


Ford Fusion Energi


BMW X5 xDrive40e


Ford C-Max Energi


Volvo XC90


BMW 330e


Hyundai Sonata Plug-In


BMW i8


Porsche Panamera S E


Porsche Cayenne S E


Audi A3 e-tron

BEV


Toyota Rav 4 EV


Honda Fit


smart EV


Ford Focus Electric


Fiat 500 E

BEV with DC Fast Charge


Chevy Bolt EV


Nissan LEAF


BMW i3


Tesla Model S


Tesla Model X


Hyundai Ioniq Electric


VW e-Golf


Chevy Spark


Kia Soul EV


Mitsubishi i-MiEV


Mercedes B Class

Many More to be Launched …

PHEV

TOYOTA Prius Prime

Est. 2016

MINI Countryman PHEV

Est. 2017

KIA Optima PHEV

Est. 2016

MERCEDES E350e

Est. 2016

MITSUBISHI Outlander

Est. 2016

AUDI Q7 e-tron

Est. 2016

VOLKSWAGEN CrossBlue

Est. 2017

HYUNDAI Ioniq PHEV

Est. 2017

KARMA PHEV

Est. 2016

BMW 330e

Est. 2016

BMW 740e

Est. 2016

HONDA PHEV

Est. 2018

BEV

PORSCHE Mission E

Est. 2019

AUDI e-tron Quattro

Est. 2018

VOLKSWAGEN BUDD-e

Est. 2018

JAGUAR E-Pace

Est. 2018

Aston Martin RapidE

Est. 2018

TESLA Model III

Est. 2017

BENTLEY EV

Est. 2018

VOLVO EV

Est. 2019

HYUNDAI Ioniq BEV

Est. 2017

CHEVROLET Bolt

Est. 2016

MERCEDES EVA

Est. 2018

BMW iNEXT

Est. 2020

BYD Qin

McLaren P1 electric

Est. 2018

INFINITI LE

NEXTEV EV

Est. 2018

FORD EV

Est. 2018

HONDA EV

Est. 2018

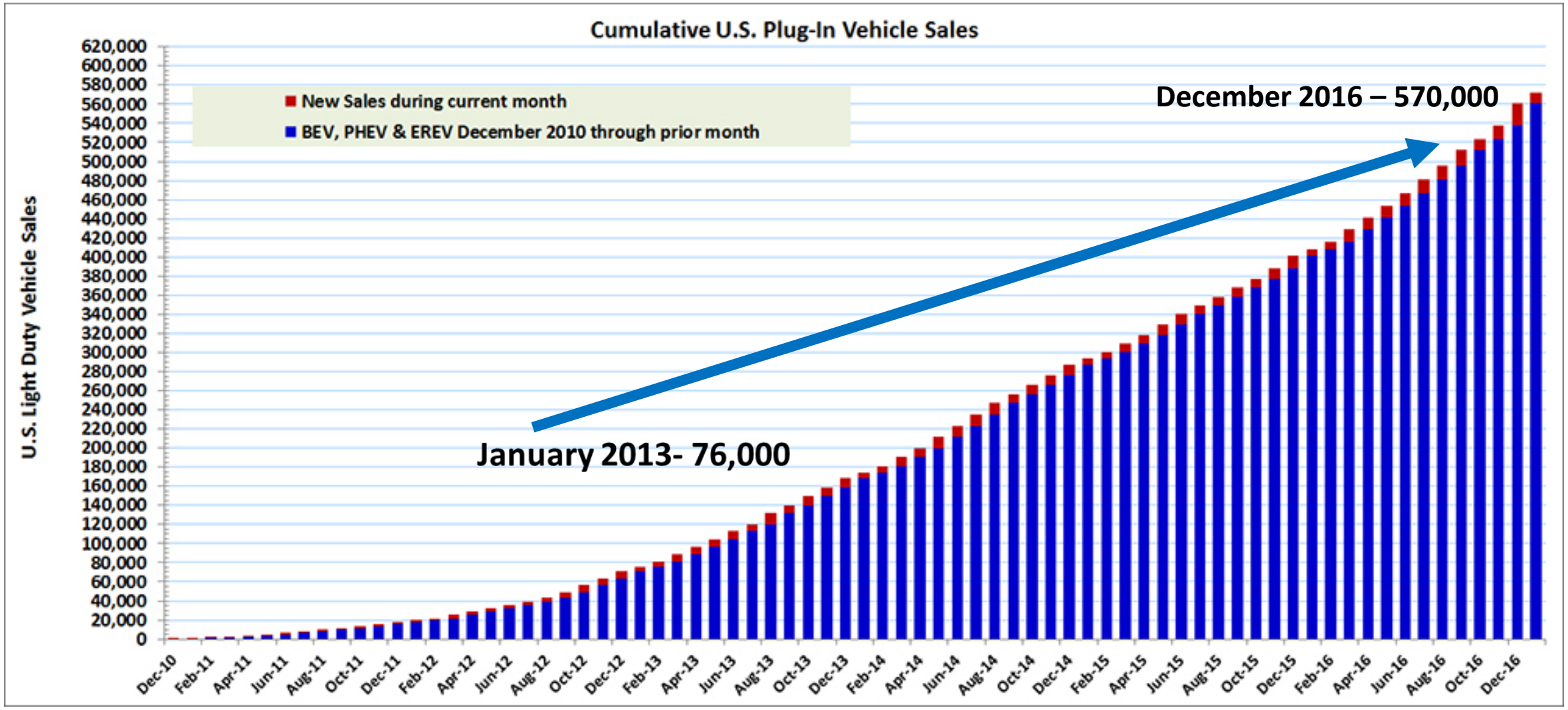
FARADAY FUTURE EV

Est. 2018

ATIEVA EV

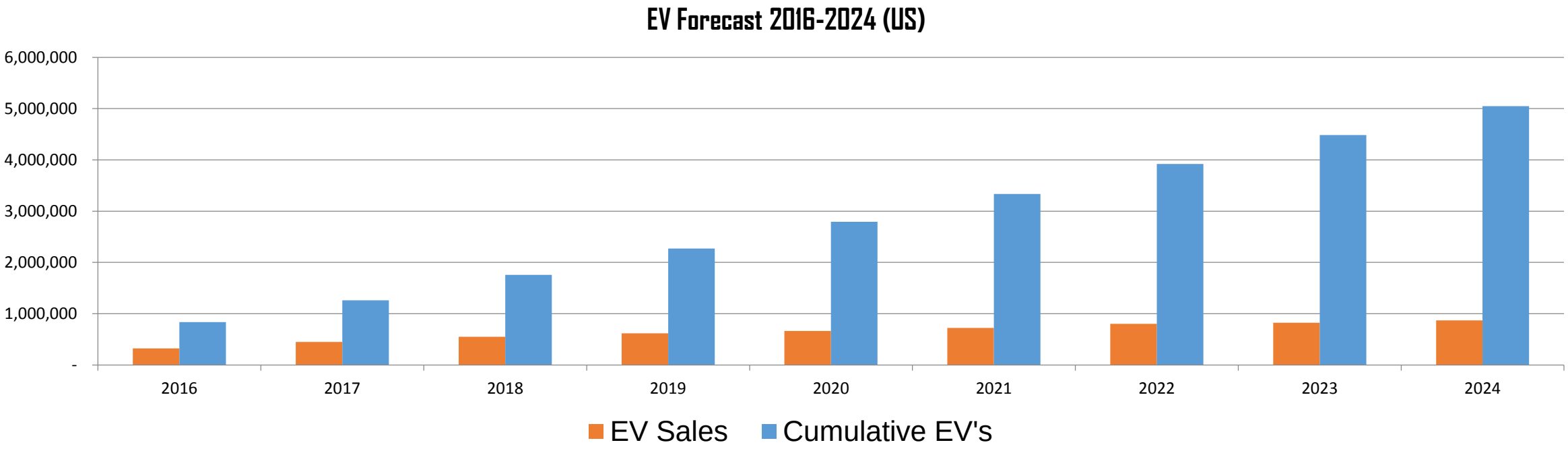
Est. 2018

US EV Sales By Year



EV Forecast

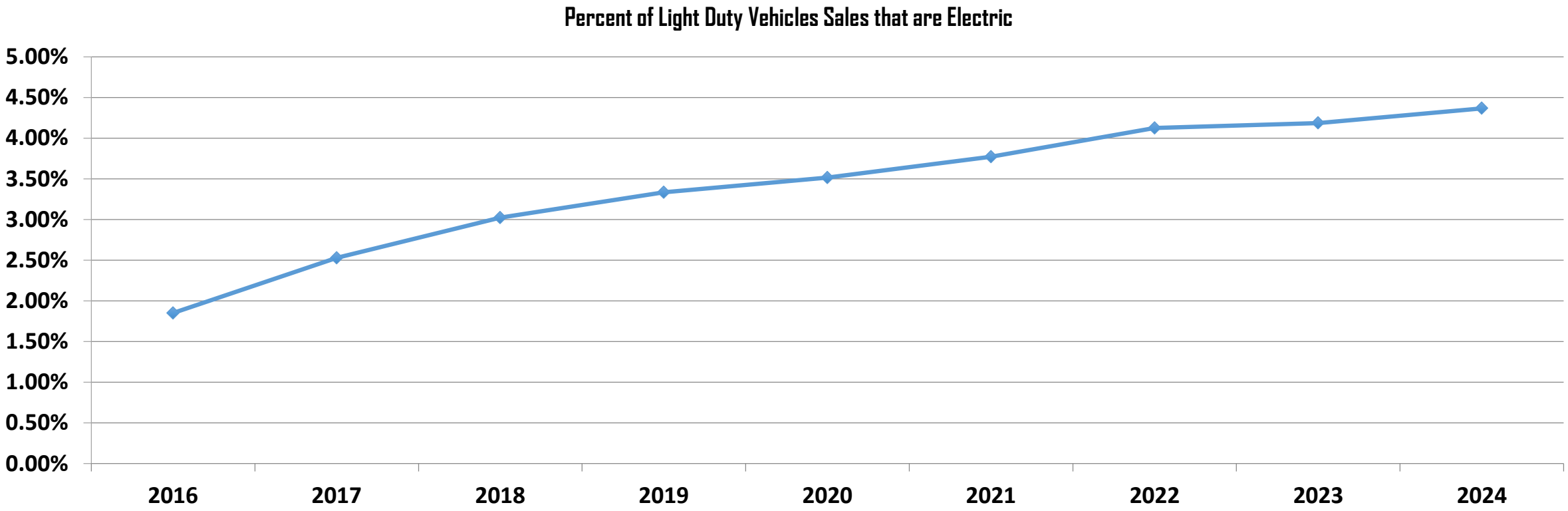
- 5 million EVs on the road by 2024
- Every hybrid will soon come with a plug



Source: Navigant Research

EV Penetration

By 2024, 4.4% of cars are expected to be EVs.



Source: Navigant Research

EV Fears

EV Fears

I’m going to run out of charge…

EV Fears

I’m going to run out of charge…

PEVs have a current range from 62 miles to 265 miles per charge.

PHEVs operate between 11 and 53 miles on all-electric driving before the gasoline engine engages.

Within the average daily commute of 80% of the population.

Charging Stations

	Level 1	Level 2	Level 3
Voltage	110 – 120 Volts AC	208V – 240 Volts AC	208V/480 Volts DC
Range per hour (RPH)	2-5 miles	10-30 miles	100-200 miles
Charging Time	12 – 18 hours	3 – 4 hours	20 – 30 mins
Connector Standard	3 pronged NEMA 5-15 to SAE J1772	Level 2 charger to SAE J1772	DC Charger to SAE Combo or CHAdeMO
Use Case	Rarely used publicly Residential charging	Full battery charging at home, top-off charging at work, shopping malls, stadiums etc.	Quick charging during short or long distance trips

Charging Stations

(Front)

(Back)

- Empire plans to continue installing stations through 2020
- Cost for a business - $0.20 to $0.60/hr. depending on vehicle
  $1 a day/per charger/charging 8 hours

EV Fears

They are too expensive…

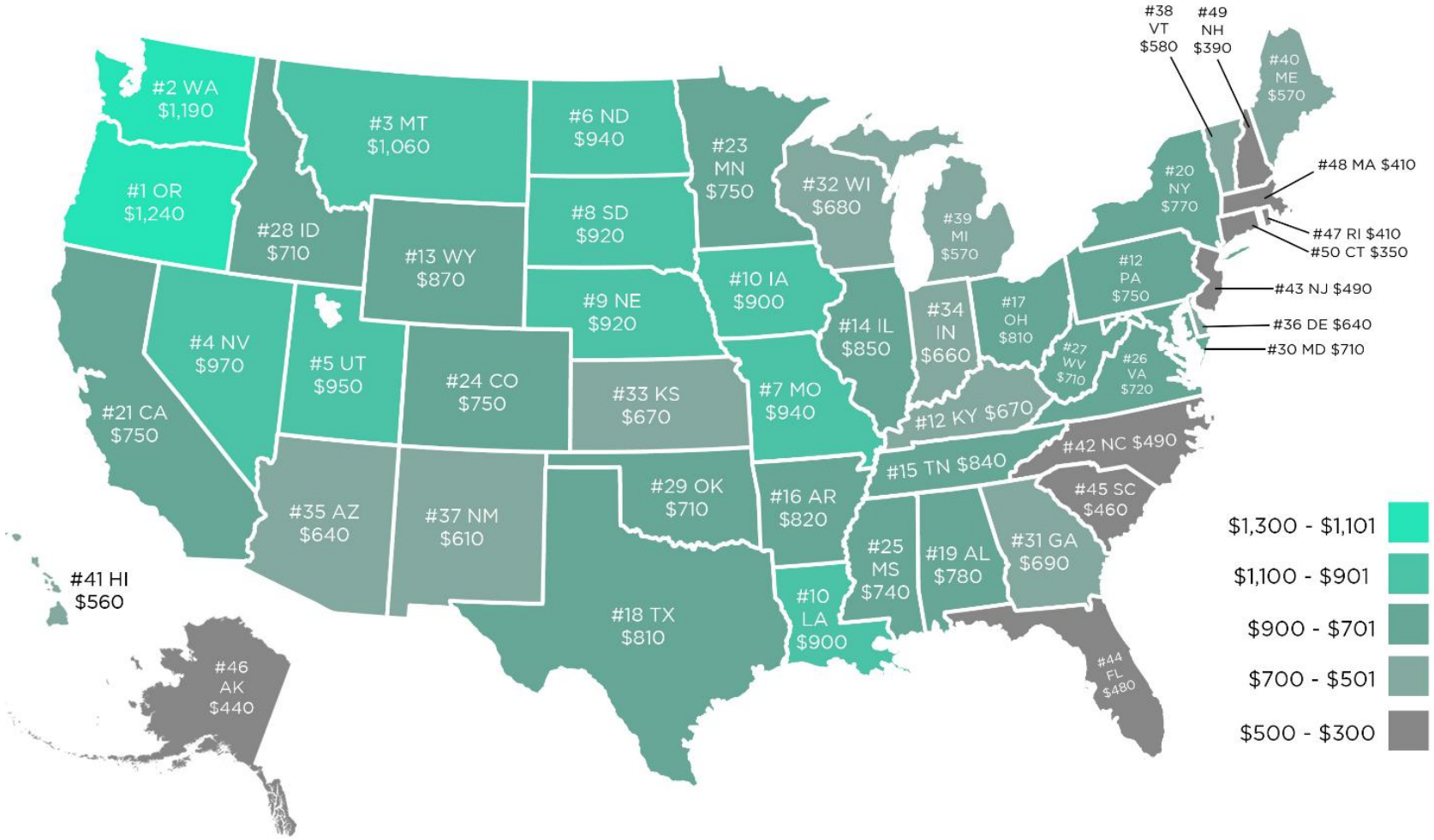
EV Fears

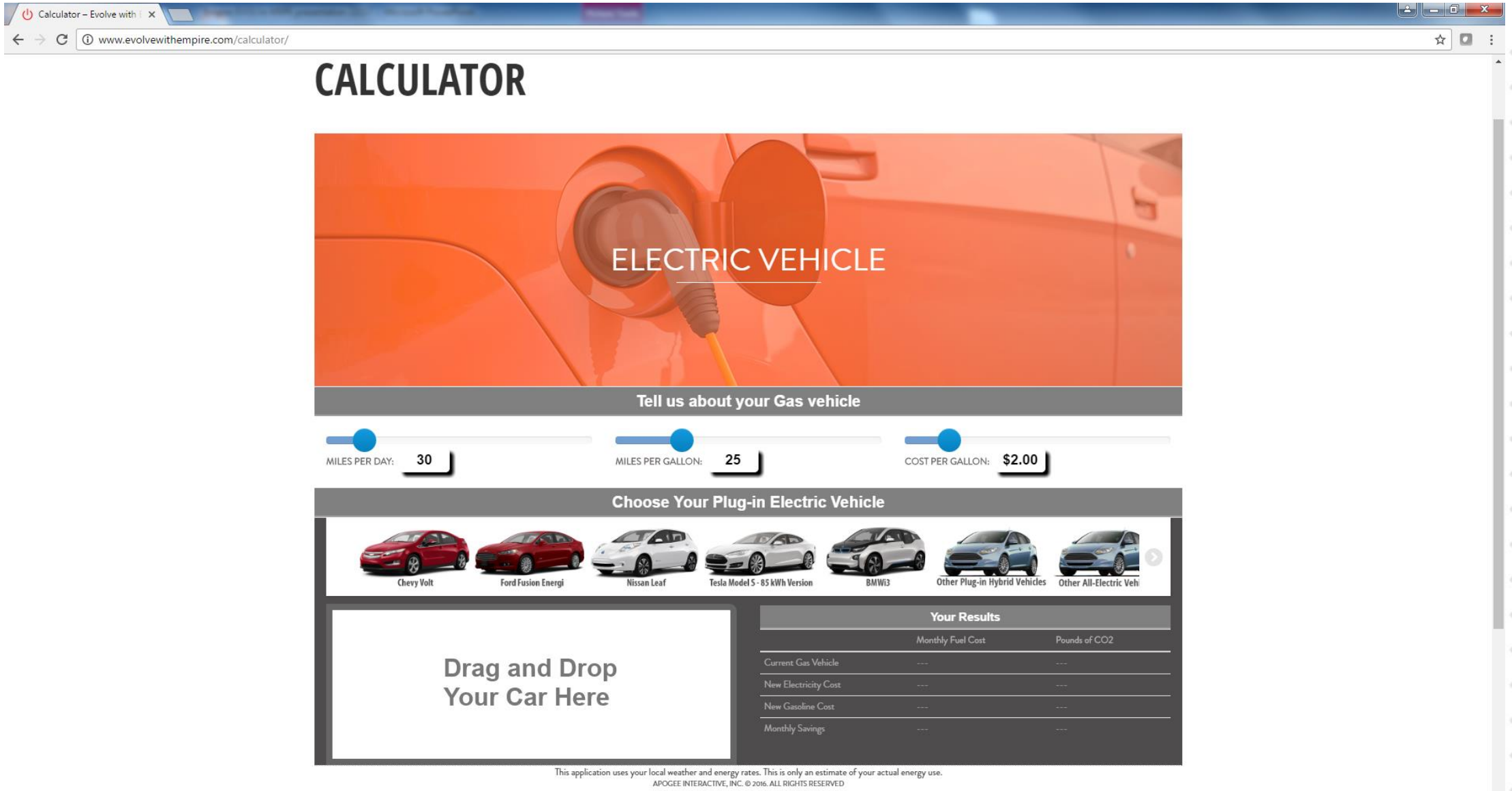
They are too expensive…

- There are more than 95 models available from more than a dozen manufacturers.
- They come in a variety of models, price points, and powertrains to suit a wide range of customers.
- Plug-in Electric Vehicles (PEVs) are currently priced as low as $22,300.
- Plug-in Hybrid Electric Vehicles (PHEVs) are currently priced below $30,800.

Driving on Electricity is Cheaper than Gas in All 50 States

- **Missouri Ranks #7**
  - $940 annual savings
- **Missourians Save More Because They Drive More and Lower Electricity Costs**
- Assumes $0.119 kWh
- Retail Gas @ $2.11
- Annual Mileage- 16,452
  - 25% more than National Avg of 13,000




Calculator – Evolve with
www.evolvewithempire.com/calculator/
CALCULATOR
ELECTRIC VEHICLE
Tell us about your Gas vehicle
MILES PER DAY: 30
MILES PER GALLON: 25
COST PER GALLON: $2.00
Choose Your Plug-in Electric Vehicle
Chevy Volt
Ford Fusion Energi
Nissan Leaf
Tesla Model S - 85 kWh Version
BMWi3
Other Plug-in Hybrid Vehicles
Other All-Electric Vehi
Drag and Drop Your Car Here
Your Results
Monthly Fuel Cost
Pounds of CO2
Current Gas Vehicle
New Electricity Cost
New Gasoline Cost
Monthly Savings
This application uses your local weather and energy rates. This is only an estimate of your actual energy use.
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Empire Fleet Cars

Currently, there are eight plug-in electric vehicles (PHEV) in Empire's fleet.

Empire dedicates over five percent of its annual fleet replacement budget for the purchase of plug-in vehicles.

Two hybrid bucket trucks will be added to the fleet in 2017.

EV

Why is Empire launching this initiative?

- It fits with corporate goal to
  “Be Responsible Stewards of the Environment”

- Customer usage trends have flattened (including peak periods) – making this an opportune time to encourage EVs

- Optimizing the availability of off-peak power, like the growing abundance of wind energy, will help us manage costs for customers over the long-term

- Customers are becoming more interested in adopting new technologies. When they are considering options like EV, we want to be there to provide the service and information they need.

GO GREEN.

Empire Corporate Goals

“Be Responsible Stewards of the Environment”

PEVs in Missouri still emit 27.2% less pollutants than gasoline counterparts (on average).
-Alternative Fuels Data Center, Department of Energy

GET GREEN.

Empire Rebate Program

Rebates for the purchase or lease of new or used plug-in electric cars.

Total electric vehicle (PEV)	$2,000
Plug-in hybrid electric vehicle (PHEV)	$1,000

Tax Incentives

Federal Tax Credit Up To $7,500

Workplace Benefits

- EV Charging is a benefit that many employers across the US are now offering
- Employees need workplace charging to commute in their EVs or to switch to one
- It drives more EV adoption – employees are 20X more likely to switch to an EV
- Helps achieve sustainability goals and engage your employees in the cause

Multi-Dwelling Units

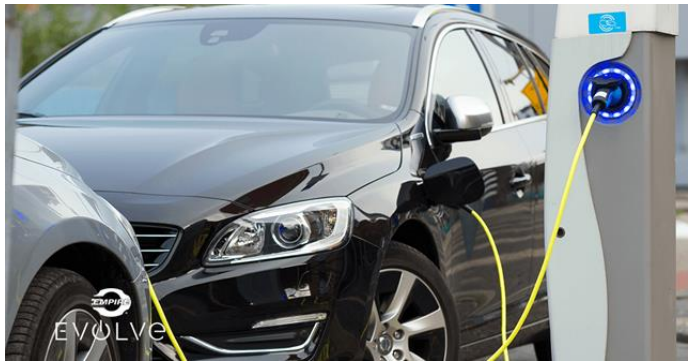
- EV charging is becoming a basic amenity
- Need to be EV ready – to differentiate yourself from competitors

Benefits for You

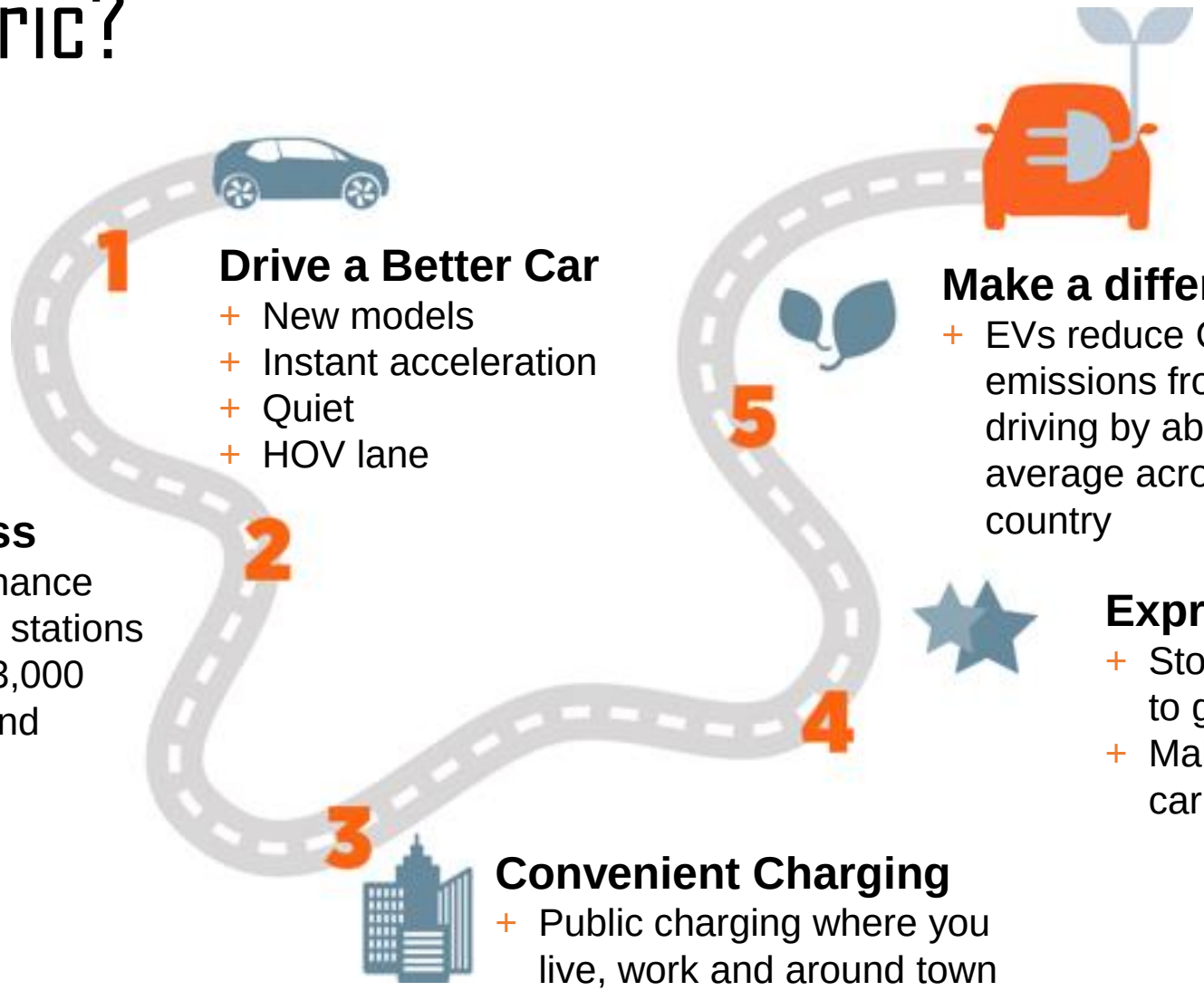
- Attract and retain tenants
- Increase property value
- Meet emerging state and city regulations
- Future-proof your property
- Establish your brand as a green leader

Retail and Hospitality

- EV drivers make very attractive customers - they make 2X the average national average income, are highly educated, and are very green-minded
- EV drivers go where they can charge - they choose their destinations based on the availability of EV charging from their preferred network
- EV drivers are loyal to the plug – they make habitual stops at preferred destinations contributing to a loyal set of customers that help build a repeat business
- A visual way to show commitment to customers and the environment
- As customers “top off” their electric vehicle charge, they spend more time in your business, which equates to more money spent with you



Why Electric?



Drive for Less
+ Less maintenance
+ Avoiding gas stations can save $13,000
+ Tax credits and Rebates

Drive a Better Car
+ New models
+ Instant acceleration
+ Quiet
+ HOV lane

Convenient Charging
+ Public charging where you live, work and around town

Express Charging
+ Stop for 15-30 minutes to get a quick recharge
+ Make an EV your only car

Make a difference
+ EVs reduce CO_2 emissions from driving by about 50% on average across the country

EV

Learn more about EVs at **fueleconomy.gov**

Rebates and forms **evolvewithempire.com**

Questions email **electric.vehicles@empiredistrict.com**.